

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
ENGINEERING AND COMPLIANCE
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P/C

COMPANY NAME AND ADDRESS

Quemetco, Inc.
720 South Seventh Avenue
City of Industry, CA 91746

ID 8547

mailing and equipment address

EQUIPMENT DESCRIPTION

APPLICATION NO. 533021

ALTERATION TO THE SECONDARY LEAD-SMELTING SYSTEM OF A/N 462562 BY:

1. THE REMOVAL OF:

DRYER, ROTARY TYPE, 5'-0"DIA. X 31'-0"L., 25-H.P.

2. THE ADDITION OF:

DRYER, ROTARY TYPE, **6'-5"DIA.** X 31'-0"L., **40-H.P.**

APPLICATION NO. 533001

TITLE V FACILITY PERMIT REVISION

HISTORY

Application Nos. 533001 and 533021 were received on 2/7/2012. A/N 533021 was received as Class I for a Permit to Construct to replace the rotary dryer furnace drum. A/N 533001 is the Title V Minor Revision application which will be used to update the Title V permit pursuant to the requested changes.

The table on the following page summarizes the recent permit history for the rotary dryer/reverberatory furnace permit unit:

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Reverberatory Furnace Permit Unit Past History

A/N	Appl. Date	P/O	P/O Date	Comments
115777	10/19/1983	M48777	4/7/1986	
142616	3/18/1986	cancelled	NA	superseded by A/N 180342
180342	12/20/1988	cancelled	NA	P/C 10/24/1989, superseded by A/N 262617
262617	2/14/1992	D54865	6/5/1992	Rule 441 P/C issued 3/10/1992
278983	3/5/1993	F7925	7/1/1997	P/C 7/6/1993 re-issued 7/14/1993 -- first permit with 600 tons/day process weight
352672	3/30/1999	cancelled	NA	P/C 5/28/1999, superseded by A/N 388372
388372	6/29/2001	pending	pending	P/C issued 12/7/2001
442948	4/21/2005	F81691	04/25/2006	Facility Permit Date 5/3/06, Current A/N 462562
462562	10/31/2006	pending	pending	P/C issued 4/19/2007 - venting of rotary dryer baghouse to the regenerative thermal oxidizer (RTO) and wet electrostatic precipitator (WESP)

PROCESS DESCRIPTION

Quemetco, Inc. recycles spent lead acid batteries to recover lead metal. Metallic lead is the desired product in this operation. A waste material, lead depleted slag, is shipped offsite for proper disposal. The waste slag by-product consists mainly of metal oxides and sulfates, and silica sand which may occur in this material as metal silicates. The metals present in the waste slag are expected to be mostly unrecoverable lead, calcium, iron, sodium, and trace heavy metals. The waste slag may also contain various alkaline earth metals.

In this operation, lead acid batteries are broken into fragments and the liquid sulfuric acid is washed and/or partially neutralized. The solid fragments include process material consisting of lead, rubber, and plastic. The bulk of the plastic is separated and washed, and sold to an external buyer. The remainder of feed material are mixed along with other additives consisting mainly of calcined carbon coke, lime, iron, borax, and/or silica sand. The shredded and treated raw feed material is stored in piles to drain as much liquid out of the feed piles as possible, and then a skip loader is used to charge buckets of this material to a rotary kiln hopper. Most of the moisture is removed in the rotary kiln and the dehydrated feed mix is charged to a reverberatory furnace. The raw mixture is smelted in this furnace and two streams of molten material are produced. The first stream, lead metal, is tapped from the reverberatory furnace and poured into large molds. The second stream, molten slag, is continuously charged to an adjacent electric resistance heated slag reduction furnace.

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The reverberatory furnace operates at high temperatures of about 1900 degrees F. Molten slag floats on top of the denser liquid lead metal. The slag layer insulates the molten lead from further oxidation. The reducing agents chemically react with the slag material and reduce the lead content to metallic lead, which sinks to the bottom of the slag layers. Due to the high temperature, long residence time, and oxidizing atmosphere in the reverberatory furnace chamber, most of the organic gases produced in the reverberatory furnace are destroyed. However, both the reverberatory furnace and rotary dryer emit ROG and CO with the majority of these contaminants coming from the rotary dryer. The rotary dryer is direct fired and is not designed to heat the feed to high temperatures.

The exhaust outlet from the rotary dryer baghouse is vented to an RTO, followed by the facility WESP. The exhaust outlets from the reverberatory furnace scrubber, slag furnace scrubber, and refining pot furnace baghouse are vented to the facility WESP. The battery breaking system is controlled by a total enclosure building vented to two room ventilation baghouses, each equipped with a secondary HEPA filter dust collector. The main process building is a total enclosure and is vented to nine separate room ventilation baghouses, each equipped with a secondary HEPA filter dust collector.

PROPOSED PROCESS CHANGES

The only change proposed under the current permit applications is the replacement of the rotary dryer furnace drum with a new, slightly larger one. All other descriptions remain unchanged. There are no changes in permit conditions. The following description identifies the main components of this permit unit. The changes are highlighted in bold.

A/N 533021 FULL DESCRIPTION

SECONDARY LEAD-SMELTING SYSTEM CONSISTING OF:

1. CHARGING HOPPER, 3'-0"W. X 15'-7"L. X 5'-0"H.
2. BELT CONVEYOR, 10-H.P.
3. KILN FEEDER, SCREW TYPE, 3-H.P.
4. DRYER, ROTARY TYPE, **6'-5"DIA. X 31'-0"L., 40-H.P.**, WITH ONE BURNER, NORTH AMERICAN MODEL NO. 42-13-10-LEX, 10,000,000 BTU PER HOUR NATURAL GAS OR PROPANE FIRED, WITH OXYGEN ENRICHMENT, AND WITH A 20-H.P. COMBUSTION AIR BLOWER.
5. BELT CONVEYOR, FURNACE FEED, 5-H.P.
6. FURNACE, LEAD ACID BATTERY SCRAP, REVERBERATORY TYPE, 9'-4"W. X 30'-2"L. X 8'-7"H., WITH FOUR AMERICAN COMBUSTION, INC BURNERS, 34,000,000 BTU PER HOUR TOTAL NATURAL GAS-OR PROPANE-FIRED, WITH OXYGEN ENRICHMENT, AND WITH A 50-H.P. COMBUSTION AIR BLOWER.
7. CONVEYOR, SLAG DISCHARGING, 10-H.P., COMMON TO THE LEAD SLAG PROCESSING FURNACE.

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EVALUATION

CEQA

Based on the CEQA form submitted with this application, this project is not subject to a CEQA evaluation.

RULE 212

Since this project will not result in an emissions increase and since this facility is not located within 1,000 feet from the outer boundary of a school, public notice pursuant to Rule 212 is not required.

RULE 401

Due to the nature of this equipment, visible emissions are not expected. Therefore, compliance with this rule is expected.

RULE 402

The proposed changes are not expected to result in increases of emissions of toxic air contaminants. Since there are no emissions increases, nuisance problems are not anticipated. Therefore, compliance with this rule is expected.

RULE 405

Since the subject equipment is vented to a baghouse and the WESP, the exhaust gas particulate concentrations are expected to be diminimus. Therefore, compliance with this rule is expected.

REGULATION XIII

No increases in emissions are expected. Therefore, Regulation XIII is not applicable in this case.

BACT

Since there is no increase in air contaminants, a BACT evaluation is not required in this case.

RULE 1407

Compliance with the 98 percent control performance standard in Rule 1420 has been previously demonstrated through source tests. Therefore, this equipment is exempt from the particulate efficiency standard in this rule pursuant to subpart (i)(6) of this rule. Permit conditions on the APCS equipment ensure compliance with the instrumentation requirements in this rule.

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RULE 1420

Rule 1420 (d) requires that the ambient lead concentration at or beyond the fence line of this facility does not exceed 1.5 ug/m^3 on a 30 day average. This facility is currently in compliance with this requirement.

Previous source test data has demonstrated that all control systems tested so far have at least 98 percent control efficiency on lead emissions. The source test report for the second battery wrecker enclosure building is pending. Based on previous test data, compliance is expected.

RULE 1420.1

The most recent monthly ambient air monitoring report submitted by Quemetco indicates that the fence line concentrations at all ambient air monitors in the vicinity of Quemetco are below 0.15 ug/m^3 .

Subpart (f)(2) requires that:

The total facility mass lead emissions from all lead point sources shall not exceed 0.045 pounds of lead per hour. The maximum emission rate for any single lead point source shall not exceed 0.010 pounds of lead per hour. The total facility and maximum emission rates shall be determined using the most recent source tests conducted by the facility or the District.

Since the **total** facility lead emissions are equal to approximately 0.0037 lbs/hr, compliance with both of these limits is expected.

All baghouses not equipped with PTFE membrane type filter bags are additionally equipped with HEPA secondary filters in compliance with subpart (f)(4) of this rule, and the HEPA filters are rated by the manufacturer to be 99.97 percent efficient on 0.3 micron particles, also required by this subpart.

All baghouses without HEPA filters at this facility are equipped with PTFE membrane type filter bags pursuant to the requirements in subpart (f)(5) of this rule.

GRANT 105

Since there are no increases of emissions from this project, the Grant 105 permit conditions are not required in this case.

CAM

CAM requirements pertain to the requirements of 40 CFR 64, Continuous Assurance Monitoring. The CAM rule contains specific federal monitoring requirements for process equipment which is vented by air pollution control systems where the facilities which are major sources, as defined in Title V (Reg 30).

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APPLICABLE PERMIT CONDITIONS

The following permit conditions will ensure compliance with CAM requirements:

The actual details of the normal baghouse operation designed to comply with Rules 1407, 1420, and the lead NESHAP have been implemented in the Rule 1407 and Rule 1420 plan conditions and in the Facility Permit for this facility. Specifically, the following items are noted:

1. Section J of the Facility Permit contains an itemized list of NESHAP requirements that Quemetco has to comply with, including permit conditions to maintain the SOP's required by sections 63.545 and 63.548 of the lead NESHAP.
2. Sections D and H of the Facility Permit contain specific operating conditions regarding the baghouses at this facility. These conditions have the following functions:

CONDITION	REQUIREMENTS
Plan letter	Rule 1420 requirements attached to Facility Permit
F16.2	Rule 1407 requirements
C6.1, C6.2	baghouse operating temperature limits
D12.1	differential pressure gauges
D12.5	broken bag detectors
D12.9	exhaust gas flow meters
D323.1	visible emission inspection required if public complaint of visible emissions is made
D381.1	prevention of visible emissions
E102.1	discharge dust enclosed containers
E193.1	CAM requirements (40CFR Part 64)
H116.2	Industrial Ventilation standards for exhaust systems
H116.3	compliance of bag leak detection systems with lead NESHAP requirements
K67.2	records of bag leak detector calibrations and calibration protocol, and records from baghouse inlet temperature gauges

3. The following baghouses in operation at Quemetco are subject to CAM requirements. These baghouses have the following conditions associated with them:

BAGHOUSE ASSIGNMENT	Device ID	REQUIRED CONDITIONS
Rotary Dryer Kiln Reverberatory Furnace Slag Furnace	C35, C39, C88	F16.2, C6.1, D12.1, D12.5, D12.9, D381.1, E102.1, E193.1, H116.2, H116.3, K67.2

In addition, the furnaces of D3, D8, and D84 are subject to condition no. D182.4, periodic source testing requirements for ROG, CO, PM, PM10, and lead.

The CAM Plan has been approved under A/N 436957.

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Although there are some overlapping conditions, (D12.1, D381.1, and E102.1), it has previously been determined that the CAM requirements do not apply to the room ventilation baghouses at this facility.

40CFR63 Subpart X

The lead NESHAP requirements regarding the subject equipment are:

1. Exhaust concentration limit of 2.0 mg/DSCM regarding each facility APC system.
2. Negative pressure of at least 0.02 mmHg in facility total enclosure buildings.

Source tests have demonstrated compliance with the lead concentration limit, and permit conditions ensure compliance with the negative pressure requirement.

REGULATION XXX

This project is considered to be a minor permit revision under Title V. A 45 day EPA notice and review period is required.

DISCUSSION

The subject equipment is expected to operate in compliance with all of the applicable rules and regulations of the SCAQMD.

RECOMMENDATION

APPLICATION NO. 533001

Approve TV Permit Modification

APPLICATION NOS. 533021

1. Issue Permit to Construct subject to the description and conditions in the draft permit.